

KT66 POWER TETRODE

DESCRIPTION

Type KT66 is a high slope, indirectly heated beam tetrode designed principally for use in the output stage of audio amplifiers. It may also be used as an oscillator or R.F. power amplifier for frequencies up to 30 Mc/s.

It is suitable for either single or push-pull audio operation, and may be employed as a triode with screen connected through a 100 ohm resistor to the anode.

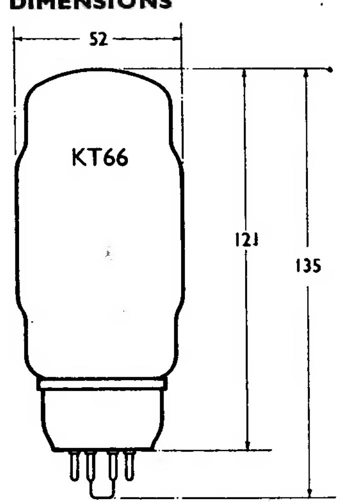
RATINGS

	Tetrode connected	Triode connected	
Heater Voltage	6·3	6·3	volts
Heater Current	1·27	1·27	amps
Anode Voltage	500	400	max. volts
Screen Voltage	400	—	max. volts
Anode Dissipation	25	25	max. watts
Screen Dissipation	3·5	—	max. watts
Anode Impedance*	22500	1450	ohms
Mutual Conductance*	6·3	5·5	mA/V
*measured at Va	250	400	
*measured at V_{g2}	250	—	
*measured at V_{g1}	−15	−38	

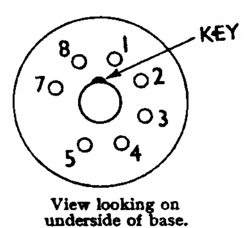
Capacitances :

	Tetrode connected	Triode connected	
Control Grid to all other electrodes	16·0	—	approx. pF
Anode to all other electrodes	11·5	—	,, ,,
Anode to Control Grid	1·1	—	,, ,,
Control Grid to Cathode	—	8·7	,, ,,
Anode to Cathode	—	15·8	,, ,,
Anode to Control Grid	—	7·2	,, ,,

DIMENSIONS



BASE



View looking on underside of base.

7-PIN OCTAL

Pin 1: Not connected
2: Heater
3: Anode
4: Screen Grid, g_2
5: Control Grid, g_1
6: Omitted
7: Heater
8: Cathode

All dimensions are in mm. and are the maximum except where otherwise stated.

TYPE KT66

OPERATING CONDITIONS

Single Valve A.F. Amplifier

	Tetrode connected	Triode connected		
Anode and Screen Voltage	250	400	250	volts
Bias Voltage	–15	–38	–19	volts
Anode Current	85	63	60	mA
Screen Current	6·3	—	—	mA
Signal Input	15	38	19	peak volts
Bias Resistor	160	600	315	ohms
Anode Load Resistance	2200	4500	2750	ohms
Distortion	9	7	6	%
Power Output	7·25	5·8	2·2	watts

Two Valves Push-Pull A.F. Amplifier. Tetrode connected, Auto Bias.

(Data per pair of valves unless otherwise stated.)

	450v. supply	250v. supply	
Anode Voltage. Full load	390	250	volts
Screen Voltage. Full load	275	250	volts
Bias Voltage	–22·5	–17·5	volts
Anode Current — No load	104	162	mA
Anode Current — Full load	125	165	mA
Screen Current — No load	5	12	mA
Screen Current — Full load	18	20	mA
Anode Dissipation, per valve — No load	9·5	12	watts
Screen Dissipation, per valve — No load	2·5	2·5	watts
Bias Resistor, per valve	500	200	ohms
Signal Input, grid to grid	70	36	volts
Load Resistance, anode to anode	8000	4000	ohms
Distortion	6	4	%
Power Output	30	17	watts

Two Valves Push-Pull A.F. Amplifier. Triode connected. Auto Bias.

(Data per pair of valves unless otherwise stated).

	450v. supply	250v. supply	
Anode and Screen Voltage	400	250	volts
Bias Voltage	–38	–20	volts
Anode Current	125	110	mA
Signal Input, grid to grid	80	40	volts
Bias Resistor, per valve	600	360	ohms
Load Resistance, anode to anode	4000	2500	ohms
Distortion	3·5	2	%
Power Output	14·5	4·5	watts

Two Valves Push-Pull A.F. Amplifier. Tetrode connected. Fixed Bias.

For low distortion and permitting continuous full load operation.

(Data per pair of valves unless otherwise stated).

	No signal	Full signal	
Anode Voltage	510	475	volts
Screen Voltage†	395	360	volts
Bias Voltage	–40	–40	volts
Anode Current	80	175	mA
Screen Current	3	19	mA
Anode Dissipation, per valve	21	17	watts
Screen Dissipation, per valve	0·6	3·5	watts
Signal Input, grid to grid	—	80	volts
Load Resistance, anode to anode	5000	5000	ohms
Distortion	—	5	%
Power Output	—	50	watts

† Stabilised screen supply voltage

TYPE KT66

Precautions in Use

1. For the prevention of parasitic oscillation, always connect a resistor of 100/300 ohms close to the screen grid terminal of the valve holder. When used as a triode this resistor is connected between screen and anode. A control grid (stopper) resistor of 10,000 ohms to 50,000 ohms. is also recommended.

2. The maximum permissible D.C. resistance from control grid to cathode is limited to 0·5 megohms for auto bias and 0·1 megohm for fixed bias application.

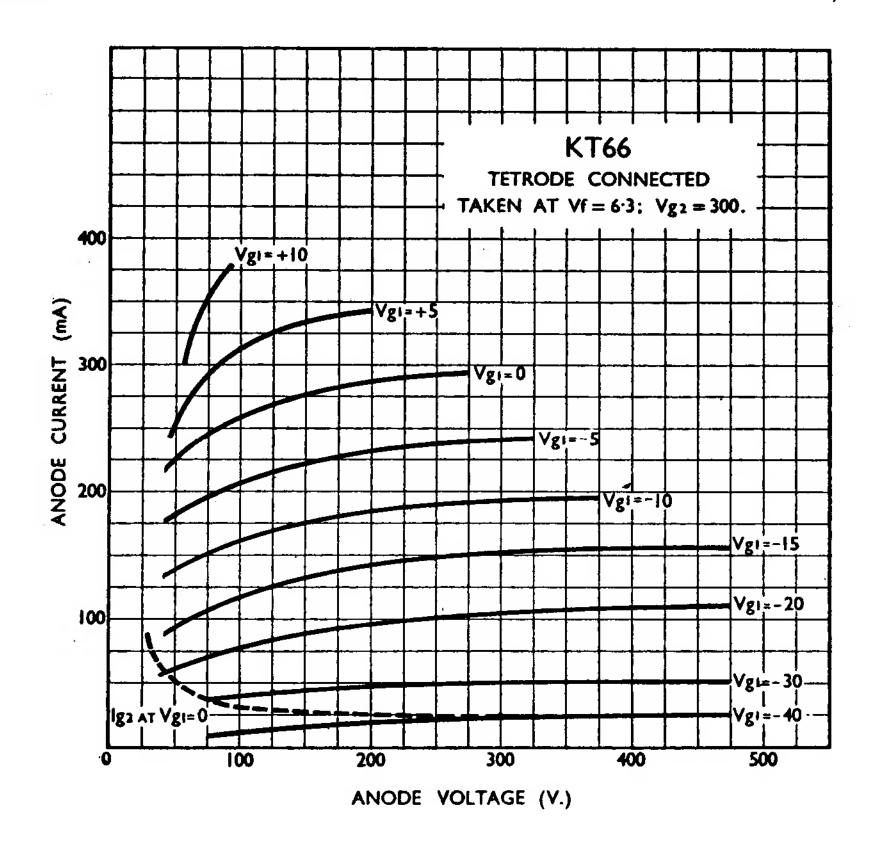
3. The heater-cathode voltage should not exceed 150 volts. When used as a cathode-coupled driver valve, the heater and cathode should be joined and a separate heater supply used for each valve.

4. In push-pull applications showing a large change in anode current between the quiescent and full output conditions, a choke input smoothing circuit having a good regulation should be used. A badly regulated supply will lead to a fall in power output and/or excessive quiescent anode dissipation.

5. The use of a common auto-bias resistor is not recommended except in applications where the maximum anode dissipation is not attained under any condition of operation.

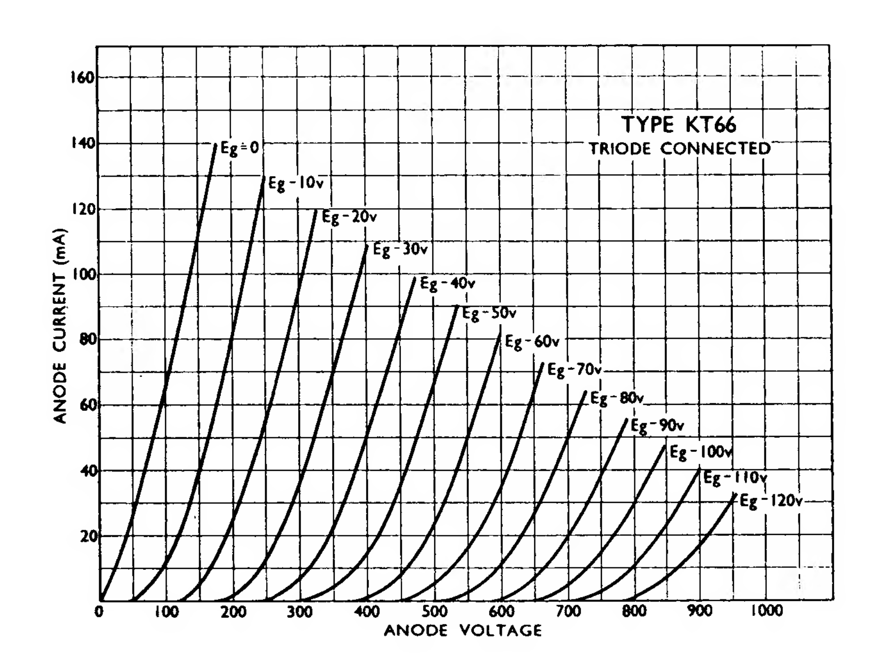
6. Ventilation: Adequate ventilation around the bulb should be provided.

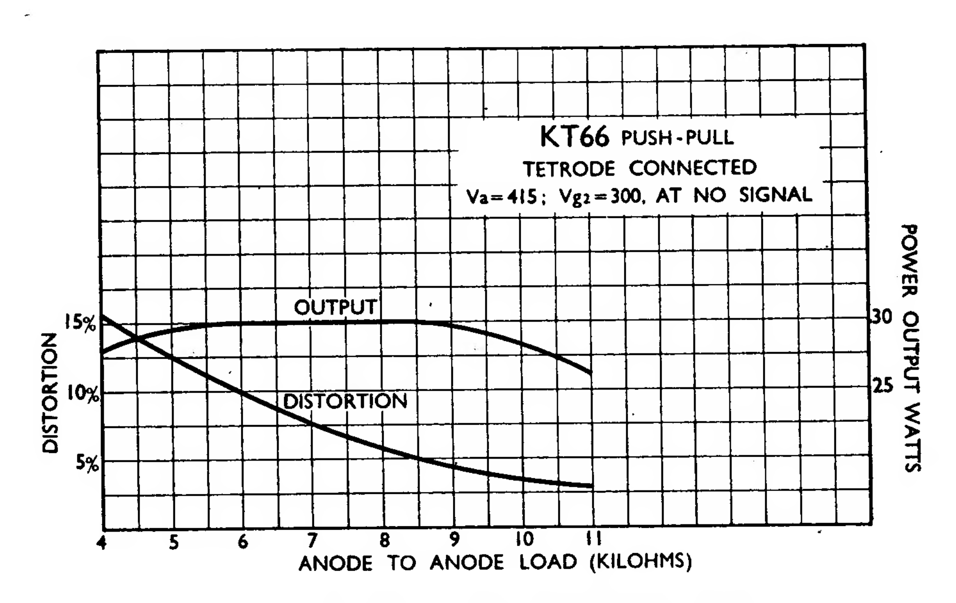
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CHARACTERISTIC CURVES OF AVERAGE VALVE.

TYPE KT66





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